

Cylindrical Broach production

A14-210

Broaches are high performance tools which are used in manufacturing process of inner and outer patterns like generation of inner gear profiles. SCHNEEBERGER offers production and resharpener possibilities for broaches. Major geometry attributes of the broach like pitch, diameter, depth of flute etc. can be measured inside the machine using 3D probe. Grinding can be performed based on the entered or on the probed values.

Current example is a round broach with Ø60mm, 1600mm profile length, 24 spline grooves and 91 teeth in total.



1. Cycletime for Production

Tool specifications				
round				
Material HSS				
Operations	Probe	Flute 1	Profiling	OD
Feed [mm/Min]	2000	100	5000	250
Power [kW]		2	4	2
Cutting feed [m/s]		28	30	28
Used wheels		35	34	14
Grinding time [min]	7	90	360	90
Total cycle time	9h 7min			

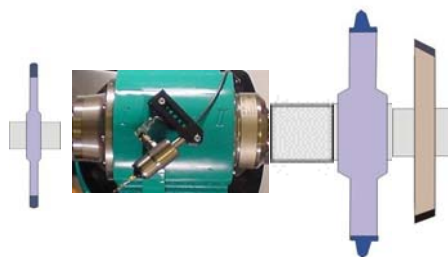
The mentioned cycle times are indicative. The material to be ground, different grinding wheels or other coolants can influence the cycle times considerably.

This calculation is based on usage of ceramic wheel for profiling, which must be dressed after every 6 gaps. Infeed amount is about 1mm in total, 0.03mm per pass.

Usage of vetrified CBN wheel for profiling reduces the grinding time to 1/2 of indicated time.

2. Used Grinding Wheels

35 Ø50 14F1 B126
34 Ø150 DXF C120
14 Ø125 1V1 B126



3. Machine and Software Requirements

Machines: 6 axes CNC grinder : CORVUS BBA
Control: Fanuc 31i
Coolant: Synthetic Oil, pressure 6 - 7 bar
Software: Quinto 5

responsible engineer: SIW, 10.09.12

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